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| UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b)) | Attorney Docket No. | 99.03776 | Total Pages | |
| | First Named Inventor or Application Identifier Kurt Clement | | | |
| | Title Software Distribution Method and Apparatus | | | |
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| APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents | ADDRESS TO: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231 |
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2. ☒ Specification **Total Pages: 15**
(preferred arrangement set forth below)
-Descriptive
-Cross References to Related Application
-Statement Regarding Fed sponsored R & D
-Reference to Microfiche Appendix
-Background of the Invention
-Brief Summary of the Invention
-Brief Description of the Drawings (if filed)
-Detailed Description
-Claim(s)
-Abstract of the Disclosure

3. ☒ Drawing(s) (35 USC 113) **Total Sheets: 3**
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4. Oath or Declaration
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5. ☐ Microfiche Computer Program (Appendix)

ACCOMPANYING APPLICATION PARTS

7. ☒ Assignment Papers (cover sheet & document(s))
8. ☒ 37 CFR 3.73(b) Statement ☒ Power of Attorney
(where there is an assignee)
9. ☐ English Translation Document (if applicable)
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Statement(s) Status still proper and desired
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APPLICATION FOR LETTERS PATENT

FOR

SOFTWARE DISTRIBUTION METHOD AND APPARATUS

INVENTOR(S):

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SOFTWARE DISTRIBUTION METHOD AND APPARATUS

Inventor: Kurt Clement

TECHNICAL FIELD

The present invention is directed toward a method and apparatus for providing digital data, such as software applications, to users. More specifically, the method and apparatus eliminate conventional inventory and distribution inefficiencies by transmitting digital data, along with means for activating that data, as part of originally manufactured computer systems.

BACKGROUND OF THE INVENTION

Maintenance of inventory has long been a costly and unfortunate reality of providing products to downstream users such as resellers or customers. In order to have products on hand for use, a supplier must either maintain a large enough inventory of products to meet any use requirements, or be able to very accurately predict use requirements and control supplies at the predicted use rate. A key variable, and one often disputed among buyers and sellers in a supply chain, is who will maintain ownership of a product at different points along the supply chain. The owner of a product bears the obvious cost of the time value of money of the product for as long as the product is owned.

A product supplier sometimes uses offers to maintain ownership of a product until actual time of purchase by an end user as an incentive to convince end sellers to carry the products of the product supplier. Traditionally, this is well known as consignment sales. Consignment sales and highly accurate inventory management, e.g. just-in-time inventory management, are illustrated in the prior art with regard to product distribution in U.S. Pat. No. 5,912,818, 5,712,989, and 5,671,362. As the economy has moved from a physical product distribution system to a system that

includes distribution of information and information products, inventory issues have also changed.

Many products of the modern economy are in fact information or digital data products. Examples include computer applications software, computer data files, analog and digital artistic and informational recordings, and the like. A distinct advantage enjoyed by information products over physical products is that information products can be stored with a minimal physical presence. For instance, the product may be stored on a recording media. However, under traditional models of distribution, information products are copied onto multiple physical media and subsequently distributed just like any other physical product. Another option for information products is to transfer or download an electronic copy of the information over a network such as a local or wide area network, or the Internet. Such transfers, especially with regard to transfer over the Internet, are typically slower than is convenient because of the relatively low bandwidth of the network. Long transfer time is a negative factor that potentially discourages an end user from using an information product.

One recent product that was introduced on a pay-as-you-use basis was Digital Video Express (DIVX). However, with DIVX a customer had to both buy digital media and pay a license fee each time the content of the media was accessed. This model did not prove commercially viable and new DIVX disks are no longer being sold. A significant problem with DIVX was the need to both buy the media and pay for its use.

ADOBE SYSTEMS, INC. has sold a product entitled "Type on Call." Type on Call stores many fonts on a CD-ROM. The CD-ROM is distributed to users who then must contact and pay ADOBE in order to receive an access code needed to activate one or more of the fonts. This art is disadvantageous because traditional distribution channels must still be used, and because a user must intervene and request an access code rather than having the computer system automatically control access.

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The email, network, and Internet service provider AMERICA ONLINE, INC. (AOL) has used various methods to distribute its access software. AOL sometimes directly distributes free media containing its access software, and subsequently charges consumers for access to its connections and network. However, the software itself is not the value provided to the customer. The associated service is the value. The software is provided free of charge and “as is.” A downside of the AOL model is that it still requires traditional distribution of media or a relatively slow download. Additionally, because there is no value assigned to the software itself, access to the software is not controlled. The access control is with regard to the associated service.

10 An improved system would conveniently provide digital data to an end user quickly and with little effort so that the user would be encouraged to use the data. Supply of the data in an improved system would avoid traditional distribution channels as well as physical inventory, thereby reducing costs to all parties. An improved system would also activate automatically in response to access to the digital data and would verify access rights of a user or provide the user with options to activate access rights. Improved systems could also take advantage of unused space in a computer system’s nonvolatile memory space to cost effectively record data for subsequent transfer.

20 SUMMARY OF THE INVENTION

An embodiment of the invention is a method of distributing software with a computer system to a user. An act of the embodiment is to record data on a fixed medium in the computer system. Another act is to provide for transfer of the computer system to the user. Additionally, access to the data is controlled through computer executable code that requires authorization for continued access to the data.

25 Another embodiment of the invention is a software module used in a computer system operable to provide controlled access to a software application being stored on a fixed medium in the computer system and being distributed with the computer system. The software module of the embodiment detects use of the software

application on the computer system, and verifies authority to access the software application.

Still another embodiment of the invention is a computer system operable to provide controlled access to a software application stored on a fixed medium in the computer system and distributed with the computer system. The embodiment may include a processor, a memory coupled to the processor, and a software module executable on the processor and the memory. The software module is responsive to the activation of the software application. The software module verifies authority to access the software application. If authority is verified, then uninterrupted access to the software application is allowed. If authority is not verified, then access to the software application is interrupted.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a functional block diagram of a computer system of an embodiment of the invention.

Figure 2 is a flowchart illustrating acts of an embodiment of the invention.

Figure 3 is a flowchart illustrating more specific acts of embodiments illustrated in Figure 2.

DETAILED DESCRIPTION OF THE INVENTION

Embodiments of the present invention are directed toward a computer system 1 as illustrated in Figure 1. The computer system 1 can be any of a number of computer systems capable of carrying out computer executable code. The computer system may be, for example, an INTERNATIONAL BUSINESS MACHINES, INC. type personal computer, or IBM clone, an APPLE COMPUTER, INC. machine, a mainframe or network host computer, a personal digital assistant (PDA) or handheld, or any other computing device having the capacity to process computer executable code.

The computer system 1 illustrated also includes a processor 2. The processor 2 may be an INTEL CORPORATION or equivalent personal computer processor, SPARC processor, ALPHA processor, MIPS processor, or a processor specialized to execute instructions in any of the computer systems as exemplified above. Similarly, the memory 3 may be system or subsystem memory of any variety that couples to the processor 2 to store programs and/or data in the computer system 1. Example types of useable memory include dynamic random access memory and programmable read only memory, as well as other types of memory as are commonly used in computer systems.

The computer system 1 illustrated in Figure 1 also includes a hard disk drive 4 that provides nonvolatile storage for the system. The hard disk drive 4 would be classified as a "fixed medium" in a computer system. A fixed medium is generally distinguishable from a removable media storage device in that the media, or physical part of the device on which information is stored, typically remains in the drive of the device. Examples of removable media are CD-ROM disks, floppy disks, DVD disks, and magnetic tapes. Among other information, the hard disk drive 4 may store a software module 5 and at least one software application 6. Embodiments of the computer system 1 are operable to provide controlled access to the software application 6 stored on the hard disk drive 4. As will be discussed in further detail below, the software application 6 may be placed on and distributed with the hard disk drive 4 during the manufacturing process. Access control may be provided by the software module 5.

The software module 5 may be executable on the processor 2 and the memory 3. The software module 5 is responsive to activation of the software application 6 on the computer system 1. That is, some embodiments of the invention are capable of detecting use of the software application 6 and acting on that detection. Upon detection, the software module 5 acts to verify authority to access the software application 6.

Figure 2 illustrates a method of distributing software in accordance with an embodiment of the invention. As shown in the first action, block 10, data is recorded on a fixed medium such as a hard disk drive at the manufacturer. In addition to a hard disk drive, the fixed medium could be another type of nonvolatile storage device as is known in the art of computer system manufacture. For instance, the fixed medium could be a fixed optical disk, a programmable read-only memory, or some other such device capable of storing information in a nonvolatile way. The data that is recorded on the fixed medium may include both software application program instructions and the instructions of the software module. In some embodiments, the software application program instructions enable a software application that does not depend on continued access to a network for fully functional operation. In other words, the software application of these embodiments is a traditional software application such as a word processing application, spreadsheet application, a gaming application, or some other application that does not require continued access to a network. Examples of software applications requiring continued access to a network for full functionality are: Internet or network access applications, multi-player interactive Web based games, and hosted application software. Without a continuing connection to a network, the second set of applications are not enabled to perform their full range of functions. For instance, a Web browser could open and read a JPEG file from a computer system's hard disk drive without a connection to a network, but could not read a JPEG file from an external Web page. Embodiments of the present invention, on the other hand, are capable of continuing fully functional use after only a brief authorizing act via a network.

In a second act, block 20, a computer system is transferred to a user. The user may be an end-user, such as a consumer, or the user could be a reseller. Transfer of the computer system to a user could be by any delivery means, including conventional means as are well known in the art.

By the act of block 30, access to the data is controlled through the execution of computer code that implements authorization procedures. The executable

determined by checking whether the user or system had sufficient account credit continue access to the data. Also, rather than inactivating access to data for insufficient account credit, users or systems with adequate qualifications could simply be billed for accessing the data regardless of the account balance.

5 As illustrated in block 35 of Figure 3, a user that does not have authority to access the data may be given the opportunity to set up an account and thereby gain access to the data. If the user does not wish to set up an account, the users ability to access the data may be disabled, block 36. Alternatively, if the user does want to set up an account for continued access to the data, the user will be asked to input personal
10 data and make payment arrangements, block 37. Successful entry of adequate personal data and payment arrangements leads to continued access to the data, block 34. Unsuccessful entry may lead to the disabling of access to the data, as was noted in block 36.

15 **Advantages of the Invention**

Embodiments of the invention provide digital data, such as computer application software, to an end user quickly and with little required effort by the user. The user is therefore encouraged to “impulse buy” access to a software application that the user might otherwise forego. Specifically, if a user developed a data
20 processing need during the period of ownership of a computer system, it would be a significant convenience for the user to merely activate a software application that met that need. Once activated the user would merely allow the system to automatically establish or assist in establishing the user’s access permissions. Compared with the traditional process of traveling to a retail outlet to buy a software application, mail
25 ordering a software application that must be both inventoried and delivered, or going through the relatively long process of downloading the software application, embodiments of the invention provide significant advances to the state of the art.

Additionally, because embodiments of the present invention provide for delivery of digital data on a fixed medium in an originally manufactured computer

system, there is absolutely no additional shipping or inventory cost associated with the delivery of the data.

Most computer systems ship with significant amounts of free digital storage space that typically is not employed by a user until a significant amount of time has passed. Therefore, inclusion of data such as software applications on the free digital storage space is an efficient and valuable contribution to the state of the art. When the balance of free digital storage space is consumed, a user can simply delete the digital data provided with the computer system.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the claims.

CLAIMS

WHAT IS CLAIMED IS:

- 1 1. A method of distributing software with a computer system to a user
2 comprising the acts of:
3 recording data on a fixed medium in the computer system;
4 providing for transfer of the computer system to the user; and
5 controlling access to the data through computer executable code that requires
6 authorization for continued access to the data.
- 1 2. The method of distributing software of claim 1 wherein the act of recording
2 data on the fixed medium includes recording software application program
3 instructions on the fixed medium.
- 1 3. The method of distributing software of claim 2 wherein recording software
2 application program instructions on the fixed medium includes recording software
3 application program instructions that enable a software application that does not
4 depend on continued access to a network for fully functional operation.
- 1 4. The method of distributing software of claim 1 wherein the act of recording
2 data on the fixed medium includes recording data on a hard disk drive.
- 1 5. The method of distributing software of claim 1 wherein the act of controlling
2 access to the data includes the computer system automatically executing computer
3 readable instructions to contact a party authorized to grant access to the data.
- 1 6. The method of distributing software of claim 5 wherein executing computer
2 readable instructions includes executing instructions to activate a network link.

1 7. The method of distributing software of claim 5 wherein executing computer
2 readable instructions includes executing instructions to activate access to the Internet.

1 8. The method of distributing software of claim 1 wherein the act of controlling
2 access to the data includes determining if a user has a sufficient account credit to
3 continue access to the data.

1 9. The method of distributing software of claim 1 wherein the act of controlling
2 access to the data includes determining if a user should be billed for accessing the
3 data.

1 10. A software module used in a computer system operable to provide controlled
2 access to a software application being stored on a fixed medium in the computer
3 system and being distributed with the computer system, the software module
4 operating by:
5 detecting use of the software application on the computer system; and
6 verifying authority to access the software application.

1 11. The software module of claim 10 wherein the software application does not
2 depend on continued access to a network for fully functional operation.

1 12. The software module of claim 10 wherein the software module and the
2 software application are stored on the computer system during manufacture of the
3 computer system.

1 13. The software module of claim 10 wherein verifying authority to access the
2 software application verifies authority of a particular user to access the software
3 application.

5 a memory coupled to the processor; and
6 a software module executable on the processor and the memory, the software module
7 being responsive to the activation of the software application to:
8 verify authority to access the software application;
9 if authority is verified, then to allow uninterrupted access to the software
10 application; and
11 if authority is not verified, then to interrupt access to the software application.

1 22. The computer system of claim 21 wherein the accessed software application
2 does not depend on continued access to a network for fully functional operation.

1 23. The computer system of claim 21 wherein verifying authority to access the
2 software application verifies authority of a particular user to access the software
3 application.

1 24. The computer system of claim 21 wherein verifying authority to access the
2 software application verifies authority of an accessing computer system to access the
3 software application.

1 25. The computer system of claim 21 wherein verifying authority to access the
2 software application is accomplished through a network connection.

1 26. The computer system of claim 21 wherein verifying authority to access the
2 software application is accomplished through an Internet interface.

1 27. The computer system of claim 21 wherein if authority to access the software
2 application is not verified, then the user is presented with an opportunity to qualify for
3 access to the software application.

1 28. The computer system of claim 26 wherein the opportunity to qualify for
2 access to the software application includes generating a request to set up an account.

1 29. The computer system of claim 21 wherein if authority to access the software
2 application is not verified, then the user's access to the software application is
3 terminated.

SOFTWARE DISTRIBUTION APPARATUS AND METHOD

ABSTRACT OF THE DISCLOSURE

The present invention provides for a method and apparatus for distributing digital information, such as software applications, to application users. By providing the digital information on unused memory space of a computer system, and providing a process for authorizing access to the information, the information can be efficiently and cost effectively transferred to users. Traditional inventory and distribution channel difficulties are avoided.

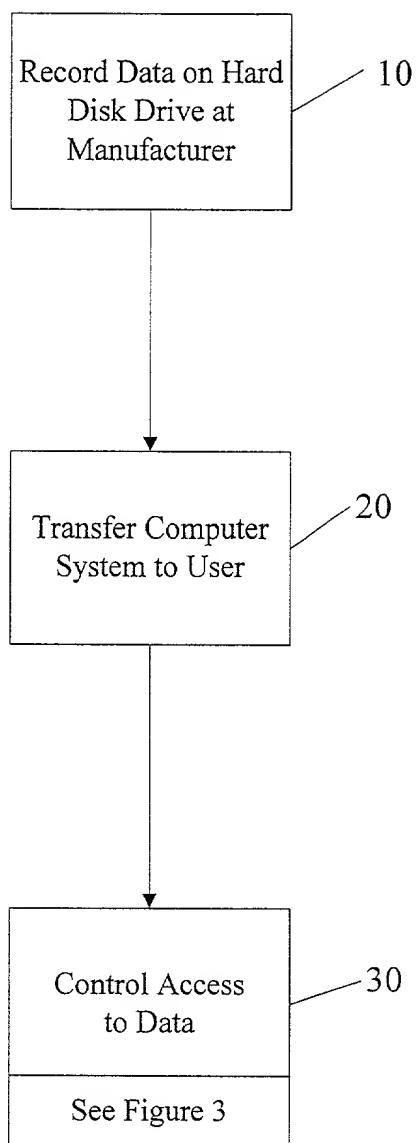


Fig. 2

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graph TD
    31[Detect Use of Software Application] --> 32[Connect to the Internet]
    32 --> 33{Does User Have Authority to Access Software Application?}
    33 -- Yes --> 34[Allow Continued Access to the Software Application]
    33 -- No --> 35{Does the User Want to Set Up an Account?}
    35 -- Yes --> 37[/Enter Personal Data and Payment Arrangements/]
    37 --> 34
    35 -- No --> 36[Disable Use of Software Application]
```

Flowchart 1000 illustrates a method for detecting and managing unauthorized use of a software application. The process begins with a rectangular box labeled "Detect Use of Software Application" (31). An arrow points down to another rectangular box labeled "Connect to the Internet" (32). From box 32, an arrow points down to a diamond-shaped decision box labeled "Does User Have Authority to Access Software Application?" (33). From decision box 33, a "Yes" path leads down to a rectangular box labeled "Allow Continued Access to the Software Application" (34). A "No" path leads right to another diamond-shaped decision box labeled "Does the User Want to Set Up an Account?" (35). From decision box 35, a "Yes" path leads down to a parallelogram-shaped box labeled "Enter Personal Data and Payment Arrangements" (37). From box 37, an arrow points left to box 34. A "No" path from decision box 35 leads right to a rectangular box labeled "Disable Use of Software Application" (36).

Fig. 3

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I acknowledge the duty to disclose information which is material to patentability of the subject matter claimed in this application as “materiality” is defined in Title 37 of the Code of Federal Regulations, § 1.56.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18 of the United States Code, § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Signature: 
(First, Middle Initial, Last)

Residence Address: 4424 Manor Circle.

City, State, Country: Sioux City, IA 51104

Citizenship: United States of America

Post Office Address: Same as address above

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| 2000 | 1 100 000 | 110 | 750 000 | 75 | 110 000 | 11 | 55 000 | 5.5 |
| 2010 | 1 200 000 | 120 | 800 000 | 80 | 120 000 | 12 | 60 000 | 6 |
| 2020 | 1 300 000 | 130 | 850 000 | 85 | 130 000 | 13 | 65 000 | 6.5 |
| 2030 | 1 400 000 | 140 | 900 000 | 90 | 140 000 | 14 | 70 000 | 7 |
| 2040 | 1 500 000 | 150 | 950 000 | 95 | 150 000 | 15 | 75 000 | 7.5 |
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